



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-0597; Directorate Identifier 2012-NM-054-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain The Boeing Company Model 777-200, -200LR, -300, and -300ER series airplanes. This proposed AD was prompted by reports of in-service events related to electrical power system malfunctions resulting in damage to electrical load management system (ELMS) P200 and P300 power panels and the surrounding area. This proposed AD would require installing enclosure trays to contain debris in certain ELMS panels, and replacing certain ELMS contactors. We are proposing this AD to prevent contactor failures, which could result in uncontained hot debris flow due to ELMS contactor breakdown, consequent smoke and heat damage to airplane structure and equipment during ground operations, and possible injuries to passengers and crew.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. For Smiths Aerospace and GE Aviation service information identified in this AD, contact GE Aviation, Customer Support Center, 1 Neumann Way, Cincinnati, Ohio 45215; telephone: 513-552-3272; e-mail: cs.techpubs@ge.com; Internet: <http://www.geaviation.com>. You may review copies of the referenced service information at the FAA, the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Georgios Roussos, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, Seattle Aircraft Certification

Office (ACO), FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone (425) 917-6482; fax (425) 917-6590; e-mail: georgios.roussos@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2012-0597; Directorate Identifier 2012-NM-054-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We have received reports of in-service events related to electrical power system malfunctions that resulted in damage to ELMS P200 and P300 panels.

Some operators reported severe damage to ELMS panels. No in-flight contactor failures have been reported. Extended contactor operation at current close to maximum can lead to thermal degradation of the material in the contactor, which further reduces contactor protection and can lead to loose parts and consequent increased probability of electrical arcing. In addition, there was evidence of material buildup from normal operation of the contactor and the potential for foreign object debris, which could lead to short circuits within the contactor.

One operator reported that an airplane on the ground experienced smoke and heat damage from insulation blankets that smoldered after molten debris from a P200 ELMS power panel fell on the insulation blankets. When a contactor in the ELMS panel fails and overheats, the heat can cause molten debris to fall out of the panel. The bottom of the ELMS panel is open without protection to prevent hot debris from falling on to the insulation blankets and components below the panel.

These conditions could result in uncontained hot debris flow due to ELMS contactor breakdown, consequent smoke and heat damage to airplane structure and equipment during ground operations, and possible injuries to passengers and crew.

Relevant Service Information

We reviewed Boeing Special Attention Service Bulletin 777-24-0106, dated July 20, 2007, which describes procedures for installing enclosure trays for debris containment. The installation includes securing the tray with rivets onto the ELMS panel heat shield. Guidance on these procedures can be found in Smiths Service Bulletins 1000ELM-24-666, Revision 1, dated August 6, 2007; 2000ELM-24-667, Revision 1, dated August 13, 2007; and 3000ELM-24-668, Revision 1, dated August 13, 2007.

We also reviewed Boeing Special Attention Service Bulletin 777-24-0112, Revision 2, dated December 14, 2011, which describes procedures for replacing specified contactors in the ELMS P200 and P300 panels with new contactors. Guidance on these procedures can be found in GE Service Bulletins 2000ELM-24-697 and 3000ELM-24-698, both Revision 2, both dated February 3, 2011.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously, except as discussed under “Difference Between the Proposed AD and the Service Information.”

Difference Between the Proposed AD and the Service Information

Boeing Special Attention Service Bulletin 777-24-0106, dated July 20, 2007, recommends a compliance time of 60 months to install the enclosure trays for debris containment. We have determined that these trays must be installed sooner – within 36 months – to appropriately mitigate the identified unsafe condition. This difference has been coordinated with Boeing.

Costs of Compliance

We estimate that this proposed AD affects 128 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

Estimated costs

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|-----------------------|--------------------------------------|-------------------|-------------------------|-------------------------------|
| Tray installation | 3 work-hours X \$85 per hour = \$255 | \$1,729 | \$1,984 | \$253,952 |
| Contactor replacement | 6 work hours X \$85 per hour = \$510 | \$49,317 | \$49,827 | \$6,377,856 |

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2012-0597; Directorate Identifier 2012-NM-054-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 777-200, -200LR, -300, and -300ER series airplanes; certificated in any category; as identified in Boeing Special Attention Service Bulletin 777-24-0106, dated July 20, 2007; and Boeing Special Attention Service Bulletin 777-24-0112, Revision 2, dated December 14, 2011.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 24, Electrical power.

(e) Unsafe Condition

This AD was prompted by reports of in-service events related to electrical power system malfunctions resulting in damage to electrical load management system (ELMS) P200 and P300 power panels and the surrounding area. We are issuing this AD to prevent contactor failures, which could result in uncontained hot debris flow due to ELMS contactor breakdown, consequent smoke and heat damage to airplane structure and equipment during ground operations, and possible injuries to passengers and crew.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Tray Installation

For airplanes identified in Boeing Special Attention Service Bulletin 777-24-0106, dated July 20, 2007: Within 36 months after the effective date of this AD, install enclosure trays to contain debris in the ELMS panels, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-24-0106, dated July 20, 2007.

Note 1 to paragraph (g) of this AD: Guidance on the tray installation can be found in the service bulletins identified in the following paragraphs:

(1) Smiths Service Bulletin 1000ELM-24-666, Revision 1, dated August 6, 2007.

(2) Smiths Service Bulletin 2000ELM-24-667, Revision 1, dated August 13, 2007.

(3) Smiths Service Bulletin 3000ELM-24-668, Revision 1, dated August 13, 2007.

(h) Contactor Replacement

For airplanes identified in Boeing Special Attention Service Bulletin 777-24-0112, Revision 2, dated December 14, 2011: Within 60 months after the effective date of this AD, replace specified electrical power contactors in the ELMS P200 and P300 power panels with new contactors, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-24-0112, Revision 2, dated December 14, 2011.

Note 2 to paragraph (h) of this AD: Guidance on the contactor replacement procedures can be found in GE Service Bulletins 2000ELM-24-697 and 3000ELM-24-698, both Revision 2, both dated February 3, 2011.

(i) Credit for Previous Actions

This paragraph provides credit for the replacement of the ELMS contactors required by paragraph (h) of this AD, if those actions were performed before the effective date of this AD in accordance with Boeing Special Attention Service Bulletin 777-24-0112, dated February 19, 2009; or Revision 1, dated June 30, 2011.

(j) Parts Installation

As of the effective date of this AD, no person may install, on any airplane, a contactor having part number ELM827-1 in the ELMS panels and locations identified in this AD.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD. Information may be e-mailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Related Information

(1) For more information about this AD, contact Georgios Roussos, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, Seattle Aircraft Certification Office (ACO), FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone (425) 917-6482; fax (425) 917-6590; e-mail: georgios.roussos@faa.gov.

(2) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. For Smiths Aerospace and GE Aviation service information identified in this AD, contact GE Aviation, Customer Support Center, 1 Neumann Way, Cincinnati, Ohio 45215; telephone: 513-552-3272; e-mail: cs.techpubs@ge.com; Internet: <http://www.geaviation.com>. You may review copies of the referenced service information at the FAA, the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on June 7, 2012.

Michael Kaszycki,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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